

Work Order ID 68648

Tuesday, April 19, 2011 1:31:09 PM



Page 1

Item ID: D3391-023

Accept



Setup Start



Revision ID:

Stop



Item Name: Mid Tube Assembly

Start Date: 4/19/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 5/20/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

MF

Date:

11-04-19

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D3391

Rev H

100

0.00



Skidtubes

Skidtubes

0.00

Skidtubes

Memo

1-Cut tube to finish length as per Dwg D3391

2-Identify as D3391-023

3-Drill pilot holes using DT8726 (Do not drill "B" holes) and drill only 1 fwd saddle hole on one side only as per Dwg D3391

4-Open saddles and GHW holes to Ø0.375" except for fwd saddle hole of detail "J"

5-Remove .030" from Fwd indexing Ridge as per Dwg D3391

6-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391

7-Deburr

8-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker,

9-Open wearplate holes of D3391-023 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J", do not open wearplate holes of section "J"

10-Open wearplate holes of D3391-023 assembly detail section H-H to Ø0.297" (20 holes) as per Dwg D3391

SCRAP*DP**11-4-26**PTO*

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng/ Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: D3391-023 PAR #: _____ Fault Category: Weld tubes NCR: Yes No DQA: 1 Date: 11.06.09
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: 1 Date: 11/06/10

| NCR: <u>68648</u> | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|-------------------|------------|--|------------------------------|---------------------------------|-----------------------------|------------------------------|------------------------------|-----------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| <u>11-4-26</u> | <u>100</u> | <u>Wearplate holes</u> <u>off center line at Fwd</u> <u>end interfering w/ Fwd PC</u> <u>Re: Process/ Loc. of flat bottom</u> | <u>CP</u> <u>11.04.29</u> | <u>Scrap tube</u> | <u>CP</u> <u>11-4-29</u> | <u>BE</u> <u>11-04-29</u> | <u>CP</u> <u>11.04.29</u> | <u>S</u> <u>11.06.09</u> |
| | | | | | | | | |
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NOTE: Date & initial all entries

Work Order ID 68648

Tuesday, April 19, 2011 1:31:09 PM



Page 2

Item ID: D3391-023

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Setup Start



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Item Name: Mid Tube Assembly

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Cust Item ID:

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Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

11-Open .375" holes to .438" ***do not open fwd saddle holes***

DP 11-4-26

12-Locate D3391-021 in D3391-023 at 9.00" (see view z-z)

13- Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149 locating from previously drill .188" dia hole, using t-pins and clicos to ensure perfect allingment, open up previously tranfer drilled pilot holes in D3391-023/-021 to 0.438" dia. in D3391-021

14- Transfer drill 2 wearplate holes into D3391-021 using DT8217, locating from two previously drilled holes, drill remaining wearplate holes into D3391-021.

15- Locating from two fwd wearplate holes drilol remaining 6 wearplte holes in D3391-021 using DT8937

16- Open 2 fwd wearplate holes in D3391-023 to .250" dia.

17- counterbore two aft wearplate holes in D3391-021 as per dwg

18- Open 12 wearplate holes in D3391-021 to 0.297" dia.

19-Deburr and blow out all chips from inside tube

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

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Page 3

Tuesday, April 19, 2011 1:31:09 PM

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Item Name: Mid Tube Assembly

Start Date: 4/19/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 5/20/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|---|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 110 QC Quality Control | QC5- Inspect part completeness to step on W/O Memo | 0.00 0.00 | | | | _____ | _____ | _____ | _____ |
| 120 HandFinish Hand Finishing | Chemical Conversion Coat per QSI005 4.1 Memo | 0.00 0.00 | | | | _____ | _____ | _____ | _____ |
| 130 QC Quality Control | QC3- Inspect Part Finish Memo | 0.00 0.00 | | | | _____ | _____ | _____ | _____ |

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Work Order ID 68648

Tuesday, April 19, 2011 1:31:09 PM



Page 4

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Cust Item ID:

Required Date: 5/20/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 140 | Skidtubes | 0.00 | | | | | | | |
| Skidtubes | Memo | 0.00 | | | | | | | |
| Skidtubes | 1-Open float bag holes as per dwg 2-C'sink float bag holes as per dwg 3- Prepare tube for welding 4-Bond web in place as per Dwg D3391 & QSI 015. Adhere for 12 hours) A/R Sikaflex exp: _____ batch#: _____ | | | | | | | | |
| 150 | QC5- Inspect part completeness to step on W/O | 0.00 | | | | | | | |
| QC Quality Control | Memo | 0.00 | | | | | | | |
| 160 | Skidtubes | 0.00 | | | | | | | |
| Skidtubes | Memo | 0.00 | | | | | | | |
| Skidtubes | 1-Weld crossbolt spacer as per dwg D3391 & QSI 004 2-grind weld flush | | | | | | | | |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
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NOTE: Date & initial all entries

Work Order ID 68648

Tuesday, April 19, 2011 1:31:09 PM



Page 5

Item ID: D3391-023

Accept



Setup Start



Revision ID:

Stop



Item Name: Mid Tube Assembly

Start Date: 4/19/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 5/20/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 170 | QC10- Inspect visual per QSI004- ground welds | 0.00 | | | | | | | |
| QC Quality Control | Memo | 0.00 | | | | | | | |
| 180 | QC5- Inspect part completeness to step on W/O | 0.00 | | | | | | | |
| QC Quality Control | Memo | 0.00 | | | | | | | |
| 185 | Pressure Wash per QSI005 4.3 | 0.00 | | | | | | | |
| HandFinish Hand Finishing | Memo AND REALODINE AS PER PAR09-043 | 0.00 | | | | | | | |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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NOTE: Date & initial all entries



Work Order ID 68648

Page 6

Tuesday, April 19, 2011 1:31:09 PM

Item ID: D3391-023 Accept  Setup Start 
Revision ID: Stop 
Item Name: Mid Tube Assembly
Start Date: 4/19/2011 Start Qty: 1.00  Cust Item ID:
Required Date: 5/20/2011 Req'd Qty: 1.00  Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start 
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop 

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 190  Powdercoat Powder Coating | White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum Memo START TIME: _____ OVEN TEMPERATURE: _____ FINISH TIME: _____ | 0.00 0.00 | | | | | | | |
| 200  QC Quality Control | QC3- Inspect Part Finish Memo | 0.00 0.00 | | | | | | | |

| W/O: | | WORK ORDER CHANGES | | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|--|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector | |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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NOTE: Date & initial all entries

[illegible]

Page 7

Accept



Setup Start

Stop

[illegible]**Cust Item ID:**

Abstract

Customer:

Reference:

Run Start

...the ...

Stop



Operation Description

Set Up/ Run Hours

Tool ID

Tool #

**Plan
Code**

**Accept
Qty**

Reject
QtyReject
Number

**Insp.
Stamp**

0.00

11-11-11

Skidtubes

0.00

Skidtubes

Memo

Skidtubes

1- insert D3391-021 into D3391-23

2- insert T-pins into first and third fwd saddle holes

3- ON FIRST SIDE ONLY drill out 2nd and forth fwd saddles holes to 0.500" as per DSI 9364

4- remove T-pins and locate DT9415 from first and third crossbolt hole using T-pins and clekos

5- ON 2ND SIDE ONLY ream out 2nd and forth saddle hole to 0.499". Remove
DT9415

6- deburr, re-alodine and blow out chips

7- press fit D3591-1 spacers using DT9416 starting from 0.500" side

QC5- Inspect part completeness to step on W/O

0.00

[illegible]

QC

Memo

0.00

Quality Control

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
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NOTE: Date & initial all entries

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

2. Once the problem is identified, the next step is to define the objectives and goals of the project. This helps to clarify what needs to be achieved and provides a clear direction for the team.

3. The third step is to develop a plan or strategy to address the problem. This involves breaking down the problem into smaller, manageable tasks and determining the resources needed to complete each task.

4. The fourth step is to implement the plan. This involves putting the strategy into action and monitoring progress regularly to ensure that the project is on track.

5. The final step is to evaluate the results of the project. This involves comparing the actual outcomes against the objectives and goals to determine the effectiveness of the project and identify areas for improvement.

Tuesday, April 19, 2011 1:31:09 PM

Accept

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

2. Once the problem is identified, the next step is to define the objectives and goals of the project. This helps to clarify what needs to be achieved and provides a clear direction for the team.

3. The third step is to develop a plan or strategy to address the problem. This involves breaking down the problem into smaller, manageable tasks and determining the resources needed to complete each task.

4. The fourth step is to implement the plan. This involves putting the strategy into action and monitoring progress regularly to ensure that the project is on track.

5. Finally, the fifth step is to evaluate the results of the project. This involves assessing the outcomes against the objectives and goals to determine the effectiveness of the project and identify areas for improvement.

Setup Start[illegible]

Stop

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

**Cust Item ID:**

Customer:

Reference:

Run Start

1. The first step in the process is to identify the problem. This involves gathering information about the situation and the people involved.

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

[illegible]

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Work Order ID 68648

Tuesday, April 19, 2011 1:31:09 PM



Page 9

Item ID: D3391-023

Accept



Setup Start



Revision ID:

Stop



Item Name: Mid Tube Assembly

Start Date: 4/19/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 5/20/2011 Req'd Qty: 1.00

Customer:

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Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

260

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

MF
11-00-00

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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NOTE: Date & initial all entries

Picklist Print

Tuesday, April 19, 2011 1:31:01 PM

Page 1

Work Order ID: 68648

Parent Item: D3391-023

Parent Item Name: Mid Tube Assembly





Start Date: 4/19/2011

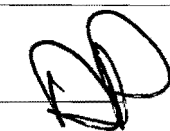
Required Date: 5/20/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP A 05.10.20 New Issue KJ/EC
 IPP B 06.02.10 ECN773 dwg rev.D EC
 IPP C 07.03.20 rev F dwg EC
 IPP D 07.03.28 re-format EC
 IPP E 07.10.31 ecn 1053P EC
 IPP Rev:F ECN 1056 07-11-13 DD verified by: EC
 IPP Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC
 IPP Rev:H 08-09-10 revH as per dwg DD verified by:EC
 IPP Rev: I 08-11-13 Removed steps per w/o, QC KJ verified by: ec IPP
 Rev:J add in seq 140 expire date &b# sikaflex DD 10.02.17 verified by:EC

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|--|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-----------------|--------------|---------------|----------------|--------|
| D2500-1-100  Skidtube Extrusion | | Manufactured | No | | | 100 | Each | 104.0000 | 1 | 1 | | | |
| | | | | <u>Location</u> | | | | <u>Loc Qty</u> | <u>Loc Code</u> | | | | |
| | | | | HALL | | | | 104 | | | | | |
| | | | | 37065 | | | | 22 | | | | | |
| | | | | 50251 | | | | 82 | | | | | |
| D3391-021  Fwd Tube Assembly | | Manufactured | No | | | 100 | Each | 0.0000 | 1 | 1 | | | |
| D3389-1  Web | | Manufactured | No | | | 140 | Each | 0.0000 | 1 | 1 | | | |
| D3681-1  Spacer | | Manufactured | No | | | 160 | Each | 9.0000 | 5 | 5 | | | |
| | | | | <u>Location</u> | | | | <u>Loc Qty</u> | <u>Loc Code</u> | | | | |
| | | | | LG001 | | | | 9 | | | | | |
| | | | | 65990 | | | | 9 | | | | | |

 11-4-26

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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NOTE: Date & initial all entries

Picklist Print

Tuesday, April 19, 2011 1:31:02 PM

Page 2

Work Order ID: 68648



Parent Item: D3391-023



Parent Item Name: Mid Tube Assembly

Start Date: 4/19/2011

Required Date: 5/20/2011

Start Qty: 1.00

Required Qty: 1.00

D3591-1 Manufactured No

210 Each

59.0000

2

2



Bushing

Location

Loc Qty

Loc Code

ST068

59

57350

22

66147

37

ALS4-1032-130 Purchased No

230 Each

1,950.000

20

20



Insert

Location

Loc Qty

Loc Code

ST281

1950

117331

1950

Tuesday, April 19, 2011 1:31:02 PM

Shop Packet Print

Page 2

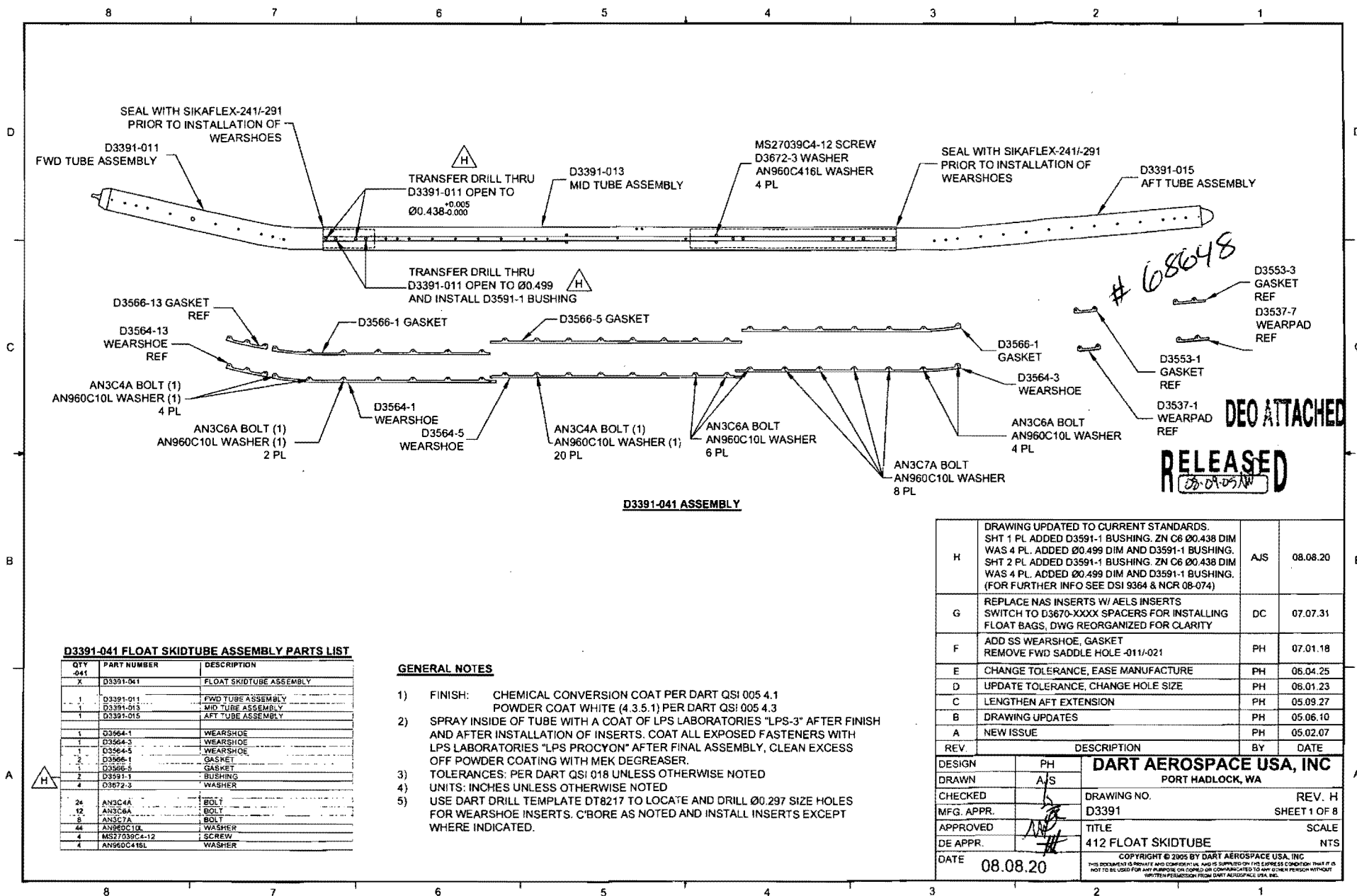
| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries



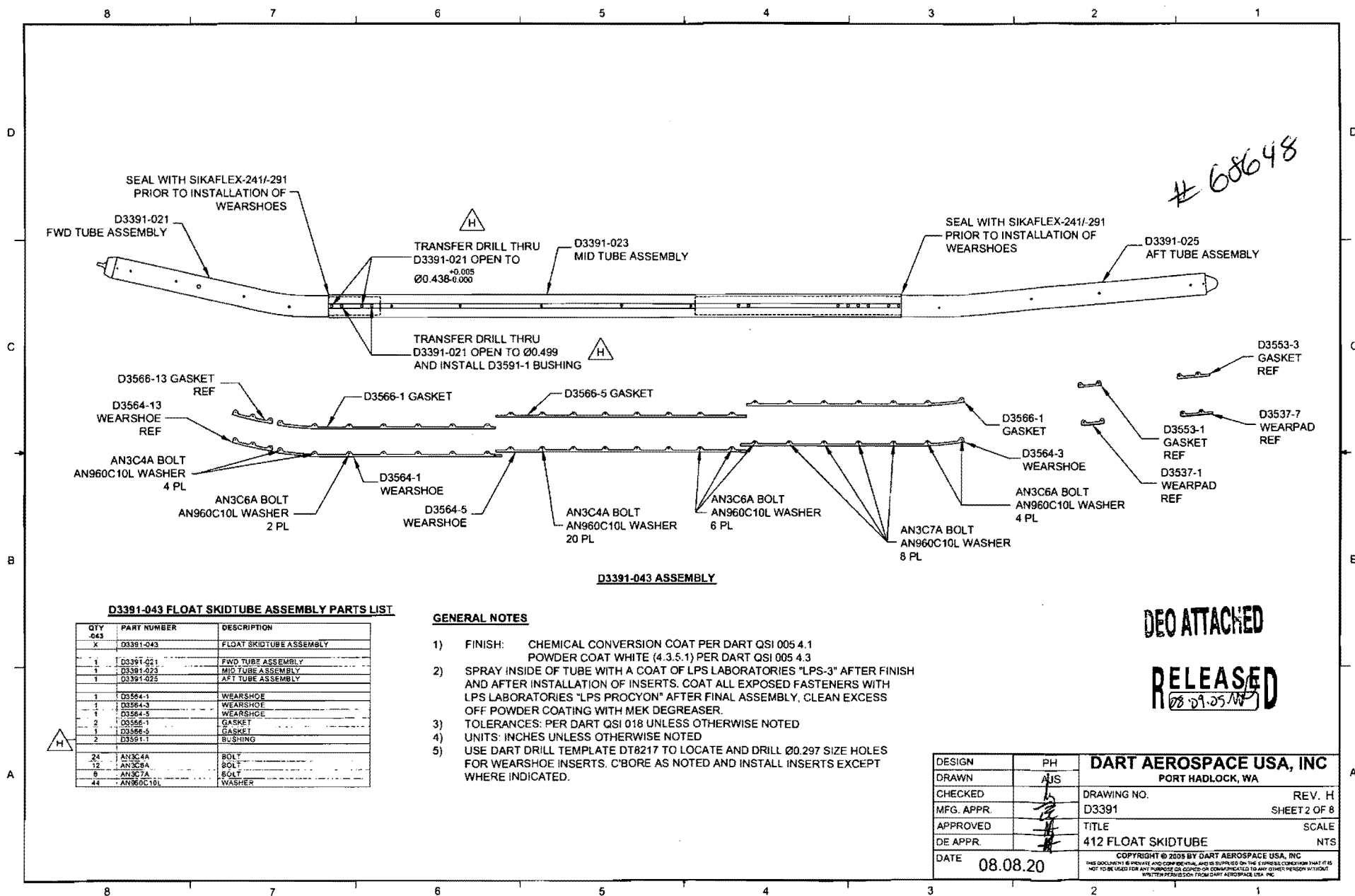
| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries



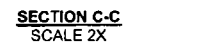
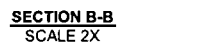
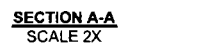
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| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries



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| DESIGN | PH | DART AEROSPACE USA, INC | |
| DRAWN | AJS | PORT HADLOCK, WA | |
| CHECKED |  | DRAWING NO. | REV. H |
| MFG. APPR. |  | D3391 | SHEET 3 OF 4 |
| APPROVED |  | TITLE | SCALE |
| DE APPR. |  | 412 FLOAT SKIDTUBE | NT |
| DATE | 08.08.20 | COPYRIGHT © 2005 BY DART AEROSPACE USA, INC THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE USA, INC. IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMERCIALITY TO ANY OTHER PERSON OR ENTITY WITHOUT THE WRITTEN PERMISSION FROM DART AEROSPACE USA, INC. | |

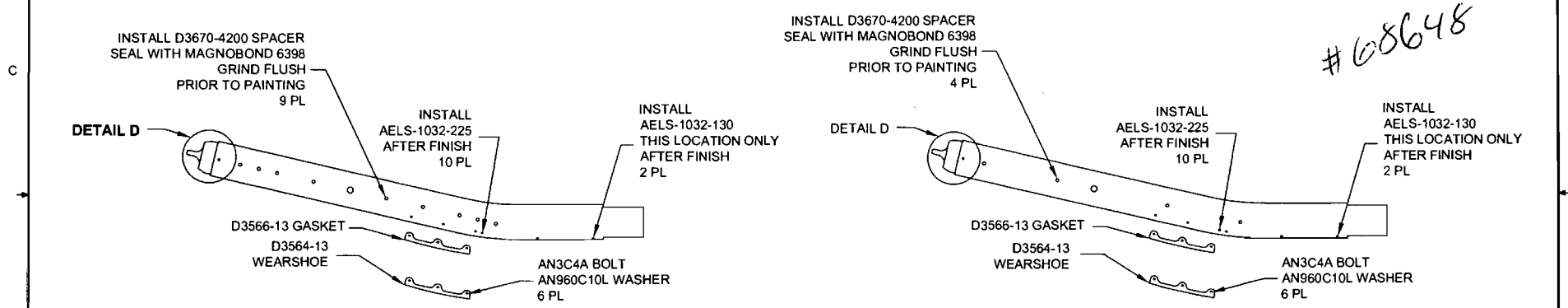
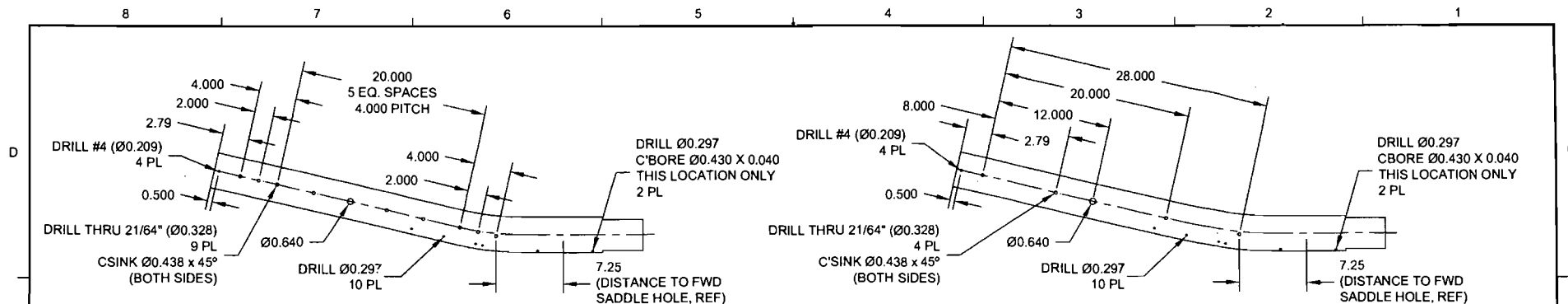
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|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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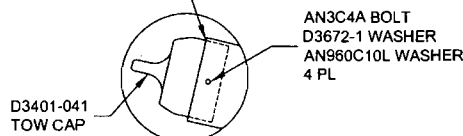
NOTE: Date & initial all entries



D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

| QTY - 011 | QTY - 021 | PART NUMBER | DESCRIPTION |
|-----------|-----------|---------------|-------------------|
| X | | D3391-011 | FWD TUBE ASSEMBLY |
| | X | D3391-021 | FWD TUBE ASSEMBLY |
| 1 | 1 | D6013-047 | FWD TUBE |
| 1 | 1 | D3401-041 | TOW CAP |
| 1 | 1 | D3564-13 | WEARSHOE |
| 1 | 1 | D3566-13 | GASKET |
| 9 | 4 | D3670-4200 | SPACER |
| 4 | 4 | D3672-1 | WASHER |
| 10 | 10 | AN3C4A | BOLT |
| 10 | 10 | AN960C10L | WASHER |
| 2 | 2 | AELS-1032-130 | INSERT |
| 10 | 10 | AELS-1032-225 | INSERT |

SEAL WITH SIKAFLEX-241/-291



DETAIL D
SCALE 2X

DEO ATTACHED

RELEASED
08-09-25-00

| | | | |
|------------|----------|---|---------------------|
| DESIGN | PH | DART AEROSPACE USA, INC | |
| DRAWN | AJS | PORT HADLOCK, WA | |
| CHECKED | | DRAWING NO. D3391 | REV. H SHEET 4 OF 8 |
| MFG. APPR. | | TITLE | SCALE |
| APPROVED | | 412 FLOAT SKIDTUBE | NTS |
| DE APPR. | | COPYRIGHT © 2005 BY DART AEROSPACE USA, INC | |
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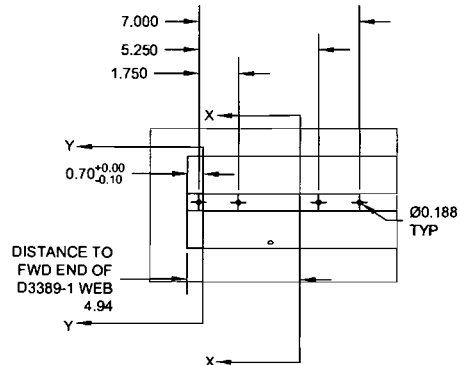
| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

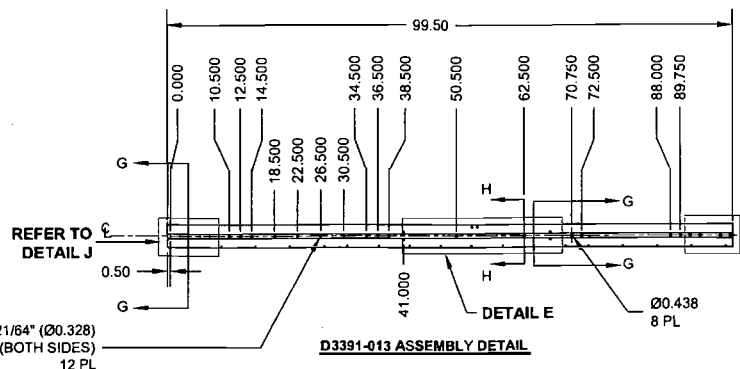
| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

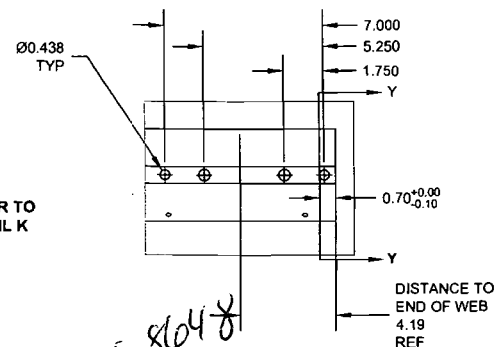


DETAIL J
SCALE 4X

DRILL THRU 21/64" (Ø0.328)
CSINK Ø0.438 X 45° (BOTH SIDES)
12 PL



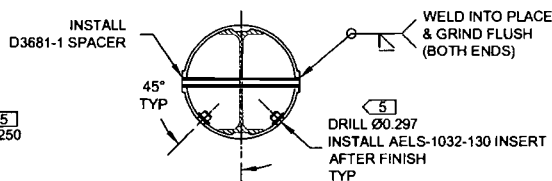
D3391-013 ASSEMBLY DETAIL



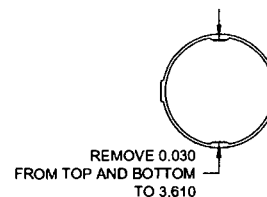
DETAIL K
SCALE 4X



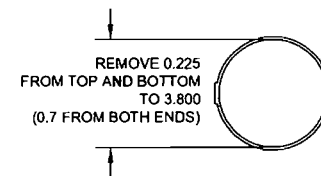
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



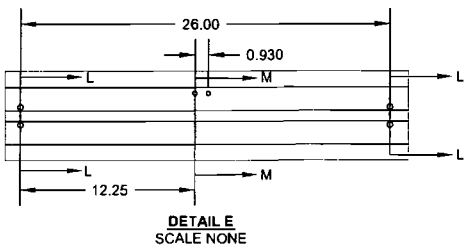
SECTION Y-Y
SCALE 5X

D3391-013 MID TUBE ASSEMBLY PARTS LIST

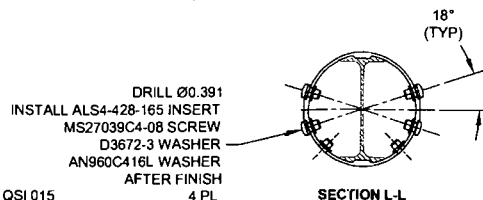
| QTY -013 | PART NUMBER | DESCRIPTION |
|----------|---------------|-------------------|
| X | D3391-013 | MID TUBE ASSEMBLY |
| 1 | D2500-1-100 | EXTRUSION |
| 1 | D3389-1 | WEB |
| 4 | D3672-1 | WASHER |
| 4 | D3672-3 | WASHER |
| 12 | D3681-1 | SPACER |
| 24 | AELS-1032-130 | INSERT |
| 4 | ALS-428-165 | INSERT |
| 4 | AN960C10L | WASHER |
| 4 | AN960C416L | WASHER |
| 4 | MS27039C1-09 | SCREW |
| 4 | MS27039C4-08 | SCREW |

D3391-013 MID TUBE ASSEMBLY

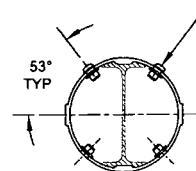
- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
- 3) WELDING: PER DART QSI 004



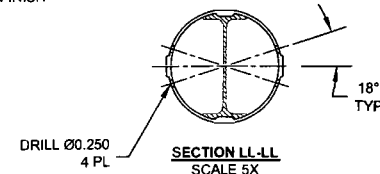
DETAIL E
SCALE NONE



SECTION L-L
SCALE 5X




SECTION M-M
SCALE 5X



SECTION LL-LL
SCALE 5X

DEO ATTACHED

RELEASED

| | | | |
|------------|---|--|--------------|
| DESIGN | PH | DART AEROSPACE USA, INC | |
| DRAWN | AJS | PORT HADLOCK, WA | |
| CHECKED | | DRAWING NO. | REV. H |
| MFG. APPR. |  | D3391 | SHEET 5 OF 8 |
| APPROVED | | TITLE | SCALE |
| DE APPR. |  | 412 FLOAT SKIDTUBE | NTS |
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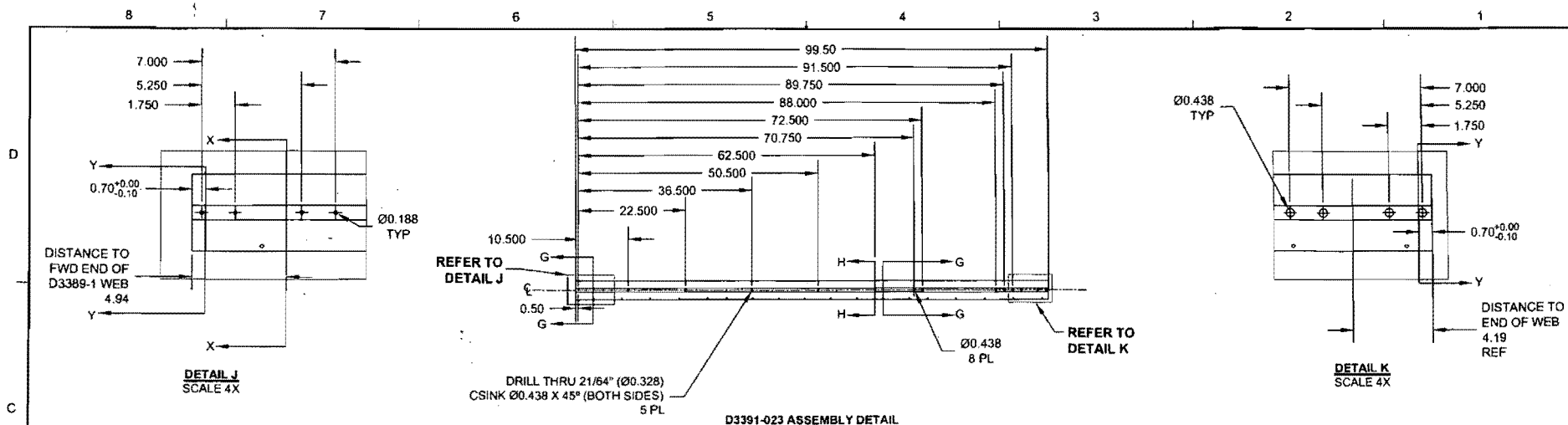
| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

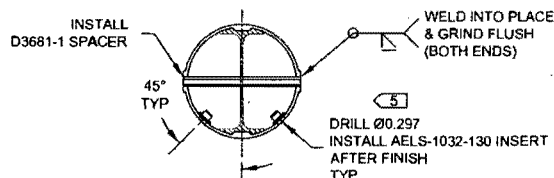
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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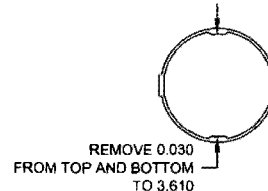
NOTE: Date & initial all entries



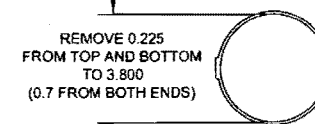
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

| QTY - 023 | PART NUMBER | DESCRIPTION |
|-----------|---------------|-------------------|
| X | D3391-023 | MID TUBE ASSEMBLY |
| 1 | D2500-1-100 | EXTRUSION |
| 1 | D3389-1 | WEB |
| 5 | D3681-1 | SPACER |
| 20 | AELS-1032-130 | INSERT |

D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

| | | |
|------------|----------|---|
| DESIGN | PH | DART AEROSPACE USA, INC |
| DRAWN | AJS | PORT HADLOCK, WA |
| CHECKED | | DRAWING NO. REV. H |
| MFG. APPR. | | D3391 SHEET 6 OF 8 |
| APPROVED | | TITLE SCALE |
| DE APPR. | | 412 FLOAT SKIDTUBE NTS |
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DEO ATTACHED
RELEASED
08-09-05-14

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

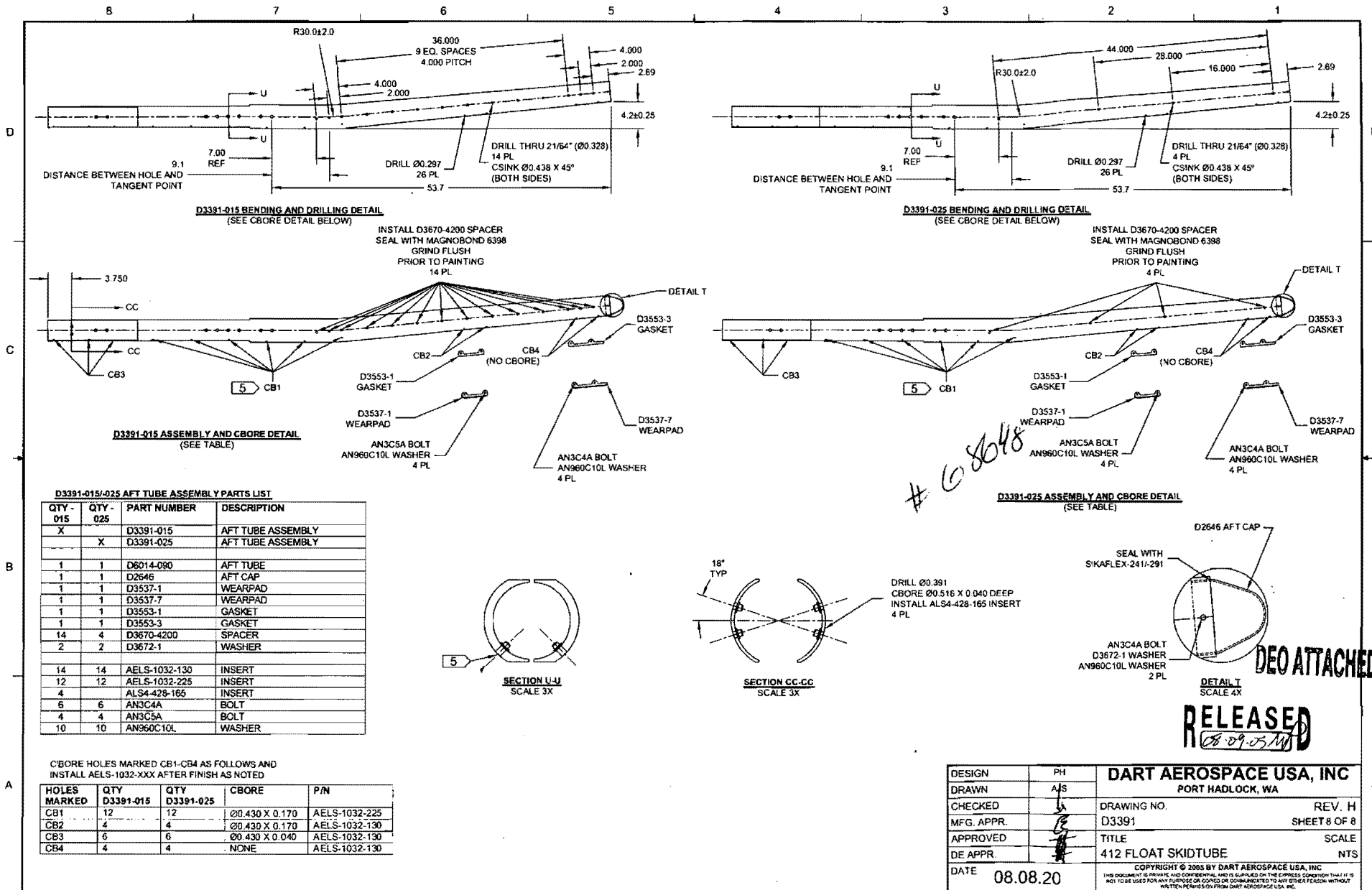
| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries



| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries

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|----------------------|-----------------------------|----------------------|--|--|-------------------------|---------------------------|--------------|
| DRAWING NO. D3391 | TITLE 412 FLOAT SKIDTUBE | REV. H | DART AEROSPACE USA, INC ENGINEERING ORDER | | D.E.O. NO. D3391-H-1 | SHEET NO. SHEET 1 OF 1 | SCALE NTS |
| DRAWN <i>MP</i> | CHECKED <i>h</i> | MFG. APPR. <i>MA</i> | APPROVED <i>MP</i> | | DE APPR. <i>h</i> | | |
| DATE 09.09.23 | DATE 04.04.24 | DATE 09/09/25 | DATE 09/09/30 | | DATE 09/09/30 | | |

PURPOSE:

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

CHANGE:

AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

- 2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH~~
~~AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH~~
 LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS
 OFF POWDER COATING WITH MEK DEGREASER.

RELEASED
 2010-02-02

MP

#68648

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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NOTE: Date & initial all entries